

WHAT IS CLAIMED IS:

1. A refueling system, comprising:

a fuel tank;

a dual valve receiver connected in fluid communication with the fuel tank, the dual valve receiver having a receiver body with an inlet and an outlet, the dual valve receiver having a first chamber and a second chamber, the first chamber being connected in fluid communication with the inlet, a first valve disposed in said first chamber and biased to close the inlet, the inlet being connectable to a fuel supply, and the first valve operating to open the inlet when a fuel is received in the inlet from the fuel supply, the second chamber having a second valve, the second valve being biased to close the outlet and operating to open the outlet when the second chamber is pressurized; and

a sensor operatively connected to the fuel tank for sensing a predetermined level of fuel within the fuel tank, the sensor being connected in fluid communication between the first chamber and the second chamber, the sensor being operative to pressurize the second chamber when fuel is below the predetermined level of fuel within the fuel tank, and operative to not pressurize the second chamber when fuel is at or above the predetermined level of fuel within the fuel tank, whereby fuel is permitted to flow through the outlet of the dual valve receiver when fuel in the fuel tank is below the predetermined level of fuel within the fuel tank, and the fuel is not permitted to flow through the outlet of the dual valve receiver when fuel in the fuel tank is at or above the predetermined level of fuel within the fuel tank.

2. The refueling system of claim 1, wherein the sensor is a jet sensor including a cutout section exposing a fuel path within the sensor to the inside of the fuel tank.

3. The refueling system of claim 1, further comprising an automatic shutoff nozzle in fluid communication with a fuel source, wherein the nozzle forms a removable connection with the receiver.

4. The refueling system of claim 1, further comprising a vent in fluid communication with the fuel tank.

5. The refueling system of claim 2, further comprising a jet pick up fitting attached to the receiver body to connect a sensor hose leading to the jet sensor, and a jet return fitting attached to the receiver body to connect a return hose from the sensor.

6. A dual valve receiver used in conjunction with a fuel sensor for rapidly filling a fuel tank with a fuel, comprising:

a receiver body having an inlet and an outlet;

5 a first valve disposed inside the receiver body, the first valve being biased toward a closed position sealing the inlet, and movable between the closed position and an open position allowing fuel to flow into the inlet;

a chamber disposed inside the receiver body to receive the fuel from the fuel sensor;

a sensor fuel path from the inlet through the fuel sensor to the chamber;

10 and

a second valve having an open position and a closed position, a first end and a second end, the first end disposed inside the chamber, the second valve being biased toward the closed position with the second end sealing the outlet of the receiver body, and moveable from the closed position to the open position
15 allowing the fuel to enter the fuel tank through the main fuel path when the chamber is pressurized with the fuel from the fuel sensor.

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7. The receiver of claim 6, further comprising:
a pick-up fitting connected to the receiver body and in fluid communication with the sensor fuel path; and
a return fitting connected to the receiver body and in fluid communication with the chamber.

8. The receiver of claim 7, wherein the pick-up fitting has a larger diameter than the return fitting.

9. A method for preparing a refueling system, comprising:
installing a dual valve receiver having first and second chambers, to be in fluid communication with a fuel tank; and
installing a jet sensor inside the fuel tank; and
connecting the jet sensor to receive fuel from the first chamber and direct the fuel to the second chamber;
whereby the sensor detects when the fuel tank is full, causing the fuel flow to cease to prevent overfilling.

10. The method of claim 9, further comprising installing a vent to be in fluid communication with the fuel tank, whereby the vent prevents pressure build up in the fuel tank.

11. The method of claim 9, wherein the jet sensor has a fuel channel and a cutout section exposing the fuel channel to the inside of the fuel tank.

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12. A method for refueling a fuel tank, the fuel tank having a receiver including a first chamber with a first valve and a second chamber with a second valve, a jet sensor, a vent, and an automatic shutoff nozzle, comprising:

connecting the automatic shutoff nozzle to the receiver, causing the first
5 valve to open;

dispensing a fuel from the automatic shutoff nozzle into the first
chamber of the receiver;

directing a portion of fuel from the first chamber to be channeled
through the jet sensor, and back to the receiver pressurizing the second chamber,
10 causing the second valve to open, and allowing the fuel from the automatic
shutoff nozzle to flow through the receiver and into the fuel tank; and

interrupting the fuel flow through the jet sensor to decrease pressure in
the second chamber when the fuel level in the fuel tank reaches the jet sensor,
causing the second valve to close, which increases pressure inside the receiver
15 and the automatic shutoff nozzle, to cause the automatic shutoff nozzle to
automatically shut off to prevent over-pressurization and over-filling of the fuel
tank.

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